

LABORATORY STANDARDIZATION IN NEWBORN SCREENING FOR DIABETES RISK ASSESSMENT

Description of project

The mission is to:

- Develop and optimize laboratory methods for measuring biomarkers of type 1 diabetes (T1D) risk and pathogenesis in dried blood spots (DBS);
- Ensure comparability of data among different laboratories using newborn screening and follow-up testing to assess risk for T1D;
- Look for new markers of environmental exposures and autoimmune pathogenesis;
- Foster partnerships between T1D research centers and public health laboratories.

Accomplishments

- Continued quarterly proficiency testing surveys of HLA screening for T1D risk.
- Established a collection of 138 cord blood samples and DBS made from them for use as reference materials in the TEDDY consortium.
- Completed analysis of data from multi-site evaluation of DBS as a matrix for autoantibody testing.
- Completed support for the Diabetes Evaluation in Washington State (DEWIT) project.
- Completed guidelines for molecular calibration of fluorescence measurements used in newborn screening and many other biomedical laboratory applications (NCCLS Approved Guideline I/LA24-P).
- Established reference HLA genotype screening values for a library of 10,000 DBS from 107 individuals, about half with T1D.

Future directions

- Conduct annual proficiency testing of HLA genotype screening for TEDDY.
- Determine parameters of population-based genetic risk assessment for T1D by case/control studies using newborn blood spot repositories and case registries.
- Pursue projects with individual investigators focused on translational research for identifying and preventing T1D.

Participants

Sponsor: Centers for Disease Control and Prevention (Newborn Screening Branch)

For more information about this project, please contact:

Dr. Robert Vogt
CDC
Phone: (770) 488-7971
E-mail: Rvogt@cdc.gov